Western Sugar Cooperative
(Grower Owned)

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July 10, 2024

Testimony of Rebecca L. Larson, Ph.D.
Chief Scientist and Vice President of Government Affairs
Western Sugar Cooperative
House Agriculture Committee Hearing on Examining the Consequences of EPA's Actions on American Agriculture

Chairman Thompson, Ranking Member Scott, and Members of the Committee, thank you for inviting me. I am the Chief Scientist for Western Sugar Cooperative owned by farm families growing sugarbeets in Colorado, Nebraska, Wyoming, and Montana. I've spent over twenty-four years working alongside farmers and have a doctorate in Plant Science, therefore I understand pesticides are essential to climate-smart farming and farm resiliency.

Pesticides minimize food waste. Forty percent of food waste is due to crop losses from pests and diseases.[1] Climate change is driving new and worsening epidemics,[2,3,4,5,6,7] which will further increase food waste. Pesticides are key for climate-smart farming[8] and maximizing crop productivity.[9,10] Maximizing productivity

[1] https://www.fao.org/plant-health-2020/home/en/
[2] Garrett, K.A. et al (2006) Climate change effects on plant disease: genomes to ecosystems. Annual Review of Phytopathology. 44:489-509.
[3] Kawasaki, K. (2023) Impact of climate change on crop pests and diseases: ensemble modeling of time-varying weather effects. Journal of the Association of Environmental and Resource Economists. 10(6): https://doi.org/10.1086/725323
[4] Ibrahim, H.Z. (2014) Climate change impacts on pests and pesticide use. A review article. Alexandria Research Center for Adaptation to Climate Change. 3:1-31.
[5] Elad, Y., I. Pertot (2014) Climate change impacts on plant pathogens and plant diseases. Journal of Crop Improvement. 28(1):99-139.
[6] Gautam, H.R., M.L. Bhardwaj, R. Kumar. (2013) Climate change and its impact on plant diseases. Current Science. 105(12):1685.
[7] Charkraborty, S., A.C. Newton. (2011) Climate change, plant diseases and food security: an overview. Plant Pathology. 60:2-14.
[8] Cooper, J., H. Dobson. (2007) The benefits of pesticides to mankind and the environment. Crop Protection. 26:1337-1348.
[9] Korav, S. et al (2018) A study on crop weed competition in field crops. Journal of Pharmacognosy and Phytochemistry. 7(4): 3235-3240.
[10] Horvath, D. P. et al (2023) Weed-induced crop yield loss: a new paradigm and new challenges. Trends in Plant Science. 28(5): 567-582.

prevents native land conversion,[11] the most significant driver of biodiversity loss in agriculture.[12] Plants comprise 80% of the food we eat.[13] Therefore, protecting plant health and productivity, protects human health. These are reasons why actions of EPA that eliminate or fundamentally change the way pesticides can be used by American farmers causes significant concern.

I will illustrate my point with specific, sugarbeet examples.

Sugarbeets are six-times more sensitive to pathogen losses[14] and forty percent more sensitive to weed pressure than other major crops.[15] To deal with this disproportionate sensitivity, sugarbeet farmers use integrated pest management to prevent crop losses. For example, seed planted by our farmers contains tolerances to seven different pests and diseases.[16] However, that tolerance is often incomplete such that judicious use of pesticides is required to augment tolerance and completely protect the crop. For example, even with genetic tolerance to Beet Curly Top virus, crop losses averaged twenty percent annually in Wyoming until the introduction of seed-applied insecticides.[17,18,19] Unfortunately, in other regions of the world, activist pressure has resulted in bans of these insecticides with devastating outcomes for their sugarbeet farmers.[20] EPA's own data shows how effective and critical these products are for our industry.[21] Therefore, EPA was correct in denying the Center for Food Safety's treated article exemption petition and protecting streamlined access to treated seeds for American farmers.[22] However, concerningly, EPA left the door open for other restrictions by announcing a treated seed rulemaking. [23] This Committee must insist that EPA not ignore their own data during this process as done when revoking Chlorpyrifos tolerances for sugarbeet.[24,25] EPA is a science-based organization which must let data dictate the process, especially their own.

The impact of weeds on crop loss are well documented.[26,27] With glyphosate, sugarbeet farmers could finally control broadleaf weeds in a broadleaf crop. Better weed control allows our growers to implement climate-smart tillage practices, increasing soil health and function by 6-fold,[28] and sugarbeet yield by thirty-five

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[11] The Lancet Commission determined global yield must increase 75% by 2050 to feed the global population without the need for native land conversion. *See* Willet, W. et al (2019) Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems. Lancet. 393(10170):447-492.

[12] Willet, W. et al (2019) Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems. Lancet. 393(10170):447-492.

[13] https://www.fao.org/plant-health-2020/home/en/

[14] Rasche, L. (2021) Estimating pesticide inputs and yield outputs of conventional and organic agricultural systems in Europe under climate change. Agronomy. 11:1300-1317.

[15] Beiermann, C. W. et al (2021) Response of Palmer amaranth (*Amaranthus palmeri* S Watson) and sugarbeet to desmedipham and phenmedipham. Weed Technology. 35: 440-448.

[16] Western Sugar Cooperative requires tolerance to Beet Necrotic Yellow Vein Virus, *Cercospora beticola*, *Aphanomyces cochliodes*, *Fusarium oxysporum*, Beet curly top virus, *Rhizoctonia solani*, and Root aphid.

[17] Beet curly top virus is a disease of sugarbeet vectored by an insect (Beet leafhopper). Host tolerance within the sugarbeet does not provide complete control.

[18] https://www.regulations.gov/comment/EPA-HQ-OPP-2023-0420-0228

[19] https://www.regulations.gov/comment/EPA-HQ-OPP-2021-0575-0334

[20] https://www.ragus.co.uk/ongoing-neonicotinoid-ban-to-drive-future-sugar-beet-yield-down-and-prices-up/

[21] https://www.regulations.gov/document/EPA-HQ-OPP-2023-0420-0010

[22] https://www.regulations.gov/document/EPA-HQ-OPP-2018-0805-0104

[23] https://www.epa.gov/pesticides/epa-issues-advanced-notice-proposed-rulemaking-public-comment-seek-additional

[24] https://www.federalregister.gov/documents/2021/08/30/2021-18091/chlorpyrifos-tolerance-revocations

[25] https://www.federalregister.gov/documents/2024/02/05/2024-02153/chlorpyrifos-reinstatement-of-tolerances

[26] Korav, S. et al (2018) A study on crop weed competition in field crops. Journal of Pharmacognosy and Phytochemistry. 7(4): 3235-3240.

[27] Horvath, D. P. et al (2023) Weed-induced crop yield loss: a new paradigm and new challenges. Trends in Plant Science. 28(5): 567-582.

[28] https://agriculture.house.gov/uploadedfiles/larson_testimony_package.pdf

percent. These sustainability advances were at risk with the emergence of a new pest: Palmer amaranth. This aggressive, prolific weed species,[29] exploded exponentially in 2022, causing significant sugarbeet losses in Colorado and Nebraska. I am grateful EPA approved an emergency exemption for a highly effective herbicide.[30] However, the process took eighteen months and cost Colorado and Nebraska sugarbeet growers over eight million dollars in lost revenue. Climate change is making issues like these more frequent and severe. Therefore, EPA must fully utilize all its clear authorities under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) to deliver timely solutions to farmers.

American farmers are in desperate need of new pesticides, yet EPA is imposing new regulations limiting use of existing pesticides and delaying approval of new products. The most impactful EPA actions relate to Strategies set forth for compliance with EPA's Endangered Species Act obligations. Hailed as the "most significant imposition of new regulation on the agricultural sector in generations",[31] the EPA's Draft Herbicide Strategy was completely unworkable for American farmers, especially small producers. The Draft Strategy overestimated exposure, species sensitivity and critical habitat size, while it underestimated the benefit of climate-smart practices and failed to include appropriate offset options. Much of this could have been avoided if EPA's Office of Pesticide Programs had better farmer engagement prior to the rollout. EPA's Agriculture Advisor I know is always ready to assist with such engagement.

Our industry submitted extensive, constructive comments to EPA.[32] Subsequently, EPA increased its engagement with USDA and producer groups, including ours. In their recent, revised proposals, EPA is addressing some unworkable portions of the Strategy, like erosion mitigation, but excessive spray buffer distances remain problematic. Without change, significant productive cropland will be lost to overly conservative spray buffers. For small production fields, including those used to produce sugarbeet seed, spray buffers make production impossible. This threatens entire industries, including ours. This Committee must ensure the EPA includes reasonable, science-based adjustments to spray buffer requirements in its Herbicide Strategy prior to finalization in August.

EPA used the AgDrift model to estimate spray drift by application method in the Draft Herbicide Strategy.[33] EPA states the model is purposefully overly precautionary in its estimates. Although I oppose the hyper-conservatism of the AgDrift model, it is used for all EPA risk assessment,[34] therefore the model itself cannot be readily adjusted to address unworkable spray buffer maximums in the Draft Herbicide Strategy. Fortunately, standardizing how the AgDrift model is applied in the Draft Herbicide Strategy could provide a simple, scientifically defensible fix for unreasonable spray buffer distance maximums. Currently, EPA requires 25-fold higher drift control for more drift resistant application methods than those methods more prone to drift. This Committee should insist EPA standardize the allowable depositional fraction (or amount of allowable drift) for all application methods. If EPA were to standardize to 99.95% drift control,[35] spray buffer distances would be reduced 50-90%. With this approach, the lowest spray buffer distance maximum would be ten feet, a level that is still conservative, but more workable for farmers. It is still protective of critical habitats and listed species. Details of this approach were submitted by our industry during the public comment period last fall.[36]

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[29] Oliveira, M.C. et al (2022) Palmer amaranth (*Amaranthus palmeri*) adaptation to US Midwest agroecosystems. Frontiers in Agronomy. 4: doi.org/10/3389/fagro.2022.887629

[30] https://www.regulations.gov/document/EPA-HQ-OPP-2023-0463-0002

[31] https://www.ndda.nd.gov/news/goehring-opposed-epa-draft-herbicide-strategy

[32] https://www.regulations.gov/comment/EPA-HQ-OPP-2023-0365-0177

[33] https://www.regulations.gov/document/EPA-HQ-OPP-2023-0365-0007

[34] https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/models-pesticide-risk-assessment

[35] This is the current allowable rate for aerial application with fine to medium droplet size in the Draft Herbicide Strategy, therefore acceptable control by EPA standards.

[36]https://www.regulations.gov/comment/EPA-HQ-OPP-2023-0365-0177

The issues stemming from EPA actions that I highlight today are further compounded by local and state activity. The lack of uniform labeling of pesticides creates confusion in the marketplace and drives litigation that threatens access to pesticides that are critical to climate-smart farming. None more evident than the litigation around glyphosate and carcinogenicity.[37] I applaud the development of the Agricultural Labeling Uniformity Act. Passage of the bipartisan H.R. 4288 will provide much needed certainty for farmers and consumers alike. Further, in Colorado, there are continued attempts each year to overturn state preemption,[38] which keeps many up at night. Sadly, in Minnesota, farmers, commercial applicators, and other stakeholders are attempting to grapple with a recent partial state preemption rollback for just a handful of cities.[39] Fortunately, though for farmers in New York and California, Governors Hochul[40] and Newsom[41] recently vetoed similar state preemption rollback attempts, as they recognize state-level regulation is necessary for robust public health and environmental protections.

I support this Committee codifying state preemption, which is already the status quo in an overwhelming majority of U.S. states.[42] The state officials who currently work collaboratively with EPA have extensive scientific training and are best situated to prevent adverse effects on the environment from pesticide use. Turning over this control to local politicians would create a patchwork of regulations that are not only difficult to understand and implement but are likely to have significant negative and unintended consequences. Notably, under the Committee's proposals for uniform labeling and state preemption, local governments can still regulate pesticide applications on public property.

Farmers across the United States have shown their willingness to engage with EPA, as evidenced by extensive public comments. EPA must seek greater farmer engagement, earlier in the process to ensure the U.S. remains the global leader in sustainable agriculture.

Again, thank you for inviting me to be here today. I look forward to taking questions.

[37] https://cdn.ca9.uscourts.gov/datastore/opinions/2023/11/07/20-16758.pdf
[38] https://leg.colorado.gov/bills/hb24-1178
[39] https://www.house.mn.gov/SessionDaily/Story/17787
[40] https://www.nysenate.gov/legislation/bills/2023/S5957
[41] https://www.gov.ca.gov/wp-content/uploads/2022/09/AB-2146-VETO.pdf?emrc=da09cc
[42] https://www.mypmp.net/2024/02/07/push-for-state-level-pesticide-preemption-continues/#:~:text=Although%2045%20states%20have%20pesticide,EPA%20and%20state%20lead%20agencies.

Rebecca Lynn Larson (Bargabus)

EDUCATION

1999 B.S. (Ecology/Field Biology) St. Cloud State University, St. Cloud, MN

2003 Ph.D. (Plant Science) Montana State University, Bozeman, MT

PROFESSIONAL EXPERIENCE

The Western Sugar Cooperative, V.P./Chief Scientist and Governmental Affairs
Denver, Colorado 2016-Present

- Manages all internal research activities, including field yield trials and disease nurseries used for hybrid approval
- Represents all research functions on the Western Sugar Cooperative management team and responsible for all research reporting to the Western Sugar Cooperative grower board
- Steers Joint Research Committee, a board of Cooperative employees and farmers, in planning and investing in outside research in support of Cooperative activities
- Manages development, implementation, expansion, and reporting related to the Cooperative's on-farm sustainability program
- Manages all government relations activities
- Serve as primary public communicator for all on-farm technical matters

The Western Sugar Cooperative, Research Agronomist
Denver, Colorado 2015-2016

- Managed all internal research activities, including field yield trials and disease nurseries used for hybrid approval
- Collaborated with Joint Research Committee, a board of Cooperative employees and farmers, in planning and investing in outside research in support of Cooperative activities

Syngenta Crop Protection, Head of Product Evaluation for Diverse Field Crops, North America
Longmont, Colorado 2012-2015

- Managed a team of senior scientists focused on late stage hybrid and agrichemical evaluations for sugar beet, sunflower, canola, sorghum, alfalfa and pulse crops (known as Diverse Field Crops)
- Co-led the Seedcare Bioteam, overseeing and prioritizing seedcare protocols impacting Diverse Field Crops
- Guided product advancement through all major markets in North America, including designing, analyzing and interpreting all late-stage sugar beet hybrid trials and disease nurseries
- Led pre-commercial seed production/conditioning activities

- Member of the Biological Assessment leadership team, Product Evaluation leadership team, Diverse Field Crops management team and the Sugar Beet management team serving as the voice for end-to-end matters related to Research & Development in North America
- Accountable for end-to-end Research & Development activities for sugar beet and sunflower, including all trialing operations, seed productions, inventory management and budgets

Syngenta Seeds, Head of Product Evaluation & Regional Trialing Lead for Sugar Beets
Longmont, Colorado 2010-2012

- Managed the late-stage hybrid pipeline; planned seed productions, yield trials and disease tolerance evaluations
- Guided product advancement through all major markets in North America
- Member of the Biological Assessment Leadership Team which lead the reorganization of the North American Research & Development structure/operation
- Managed Research & Development activities at five sugar beet, three corn, one soy and one cereals research station housing 45 full time employees and greater than $10M in operating budgets
- Represented Sugar Beet Research & Development to external customers at seed committee meetings and official variety trial tours
- Managed all regulatory compliance and stewardship for genetically modified sugar beet, including regulated traits, in North America

Syngenta Seeds, Plant Scientist III Sugar Beets
Longmont, Colorado 2007-2010

- Planned and evaluated all late-stage yield trials, disease nurseries and seed productions
- Worked closely with sales and marketing team to understanding market gaps and determine how to fill them with existing Research & Development pipeline
- Managed Research & Development activities at the Longmont sugar beet station housing seven full time employees and $900K in operating budgets
- Managed all regulatory compliance and stewardship for the Longmont site

USDA-ARS, Research Plant Physiologist
Fort Collins, Colorado 2004-2007

- Developed proteomic tools (multidimensional liquid chromatography, tandem MALDI-TOF mass spectrometry, protein-protein interaction arrays) for understanding resistance and disease in sugar beet in response to *Beet necrotic yellow vein* virus and *Fusarium spp.*
- Discovered a role for phytohormone signaling in hairy root development and identified potential biomarkers for rapid resistance selection
- Actively and quickly published research findings in accredited peer-reviewed scientific journals

- Managed several assistant scientists, lab technicians, work study students and interns

USDA-ARS, Post Doctoral Research Associate
Fargo, North Dakota 2003-2004

- Developed *Barley stripe mosaic* virus vectors for silencing *Beet necrotic yellow vein* virus in sugar beet leaf assays

Montana State University, Research Assistant
Bozeman, Montana 1999-2003

- Characterized the mode of action of a biological control agent (BCA) as induction of systemic resistance. The BCA has been patented through Montana State University (U.S. patent application serial #: 11/361,283) and has been licensed to Montana Microbial Products. Knowledge gained in these studies provided the framework for developing a rapid screening method for identifying novel BCAs. Was inducted into the Montana State University Inventors Society in 2014.

PROFESSIONAL ENGAGEMENT

Board member, Beet Sugar Development Foundation, 2021-Present
Board member and Secretary/Treasurer, American Society of Sugar Beet Technologists, 2019-2021
Board member, Colorado Ag Commission (Hickenlooper Administration), 2018-2020

TOTAL CAREER SENIOR AND JUNIOR AUTHORED PUBLICATIONS

Refereed Journals-	10	Book Chapters-	2
Invited Presentations-	50+	Technical Reports-	30+
Abstracts-	16	Proceedings-	1

Truth in Testimony Disclosure Form

In accordance with Rule XI, clause 2(g)(5)* of the *Rules of the House of Representatives*, witnesses are asked to disclose the following information. Please complete this form electronically by filling in the provided blanks.

Committee: Agriculture

Subcommittee:

Hearing Date: 07/10/2024

Hearing Title :

"Examining the Consequences of EPA's Actions on American Agriculture"

Witness Name: Rebecca L. Larson, Ph.D.

Position/Title: VP/Chief Scientist and Government Affairs

Witness Type: ◎ Governmental ○ Non-governmental

Are you representing yourself or an organization? ◎ Self ○ Organization

If you are representing an organization, please list what entity or entities you are representing:

The Western Sugar Cooperative, 7555 E Hampden Ave. Suite 520, Denver, CO 80231

FOR WITNESSES APPEARING IN A NON-GOVERNMENTAL CAPACITY

Please complete the following fields. If necessary, attach additional sheet(s) to provide more information.

Are you a fiduciary—including, but not limited to, a director, officer, advisor, or resident agent—of any organization or entity that has an interest in the subject matter of the hearing? If so, please list the name of the organization(s) or entities.

N.A.

Please list any federal grants or contracts (including subgrants or subcontracts) related to the hearing's subject matter that you, the organization(s) you represent, or entities for which you serve as a fiduciary have received in the past thirty-six months from the date of the hearing. Include the source and amount of each grant or contract.

Although unrelated to the current subject matter, I am the Point of Contact and a subawardee for USDA Partnership for Climate-Smart Commodities Grant NR233A750004G015.

Please list any contracts, grants, or payments originating with a foreign government and related to the hearing's subject that you, the organization(s) you represent, or entities for which you serve as a fiduciary have received in the past thirty-six months from the date of the hearing. Include the amount and country of origin of each contract or payment.

N.A.

Please complete the following fields. If necessary, attach additional sheet(s) to provide more information.

☑ I have attached a written statement of proposed testimony.

☑ I have attached my curriculum vitae or biography.

***** Rule XI, clause 2(g)(5), of the U.S. House of Representatives provides:

(5)(A) Each committee shall, to the greatest extent practicable, require witnesses who appear before it to submit in advance written statements of proposed testimony and to limit their initial presentations to the committee to brief summaries thereof.

(B) In the case of a witness appearing in a non-governmental capacity, a written statement of proposed testimony shall include— (i) a curriculum vitae; (ii) a disclosure of any Federal grants or contracts, or contracts, grants, or payments originating with a foreign government, received during the past 36 months by the witness or by an entity represented by the witness and related to the subject matter of the hearing; and (iii) a disclosure of whether the witness is a fiduciary (including, but not limited to, a director, officer, advisor, or resident agent) of any organization or entity that has an interest in the subject matter of the hearing.

(C) The disclosure referred to in subdivision (B)(iii) shall include— (i) the amount and source of each Federal grant (or subgrant thereof) or contract (or subcontract thereof) related to the subject matter of the hearing; and (ii) the amount and country of origin of any payment or contract related to the subject matter of the hearing originating with a foreign government.

(D) Such statements, with appropriate redactions to protect the privacy or security of the witness, shall be made publicly available in electronic form 24 hours before the witness appears to the extent practicable, but not later than one day after the witness appears.